

Strategic directions

Approved at the sixty-third session (Vienna, 27 June - 1 July 2016), amended at the sixty-sixth session of UNSCEAR (Vienna, 10 - 14 June 2019).

Preamble

In accordance with its mandate,¹ the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) undertakes scientific evaluations of sources of ionizing radiation and of the associated exposures, effects and risks to human health and to the environment. The Committee regularly reports on its evaluations to the General Assembly, which are then published for use by the scientific community, national and international organizations and the general public.

In its evaluations, the Committee considers:

- *sources* of radiation exposure, including natural sources and those resulting from human activities – past and present;
- *exposures* incurred by people in their normal living environment, in their work environment or during deliberate exposure in medical procedures, and those incurred by organisms other than humans;
- *exposures from accidents*;
- *effects*, such as biological reactions and health effects (in humans and in other organisms) that can be attributed to radiation exposure; and
- *inferred risks* of health effects in populations of people and of organisms in the environment, following exposure to ionizing radiation.

The focus of the Committee's evaluations has reflected evolving scientific understanding, developments in the use of technologies utilizing ionizing radiation, and changed societal awareness. Much emphasis was initially placed on studies of fallout from nuclear weapons testing and on effects of high radiation doses. Attention has increasingly been given to studies involving lower doses over extended time periods, to the increased use of medical procedures involving radiation exposure for the promotion of human health, and to the exposure of non-human organisms. In addition, the Committee has made scientific evaluations of exposures and effects due to nuclear and radiological accidents, with particular attention to the accidents in the former Soviet Union in 1986 and in Japan in 2011.

These strategic directions have been developed to provide high-level guidance for the Committee's future work in a challenging environment of change, acknowledging that priorities may shift in the shorter term for unforeseen reasons and in the longer term because of new knowledge, new scientific approaches and new technologies. The strategic directions are to be reflected in the Committee's ongoing Programme of Work.

In developing these strategic directions, the Committee has taken note of the outcome document of the United Nations summit for the adoption of the post-2015 development agenda² and associates itself with contributing to achieve goals 3 (good health and well-being), goal 14 (life below water), goal 15 (life on land) and goal 17 (partnerships for the goals).

¹ Resolution 913 (X) of the United Nations General Assembly, adopted 3 December 1955.

² General Assembly resolution 70/1, Transforming our world: The 2030 Agenda for Sustainable Development, adopted 25 September 2015.

This Strategic Directions document outlines:

- scientific priorities for the next decade; and,
- strategies that support the delivery of scientific evaluations that are of high quality, robust, unbiased and transparent.

Scientific priorities

Beyond the current programme of work, the Committee envisages that the scientific community's understanding of sources, exposures, effects and risks will benefit from giving priority to the following scientific areas:

Sources and exposure: *Improved mapping and evaluation of levels of exposure of people to sources of ionizing radiation in everyday life, in their occupational environment, when undergoing medical procedures, and resulting from accidents.*

The Committee will collate and evaluate up-to-date data on exposures and their trends from a wide range of geographical areas with differing demographic, health and other characteristics.

Mechanisms of radiation actions and biological reactions: *Improved understanding of mechanisms of radiation actions and reactions at all biological levels from the molecular to the population level.*

The Committee will collate and evaluate cutting-edge research in radiation biology and adopt a systems-based approach to understanding mechanisms and interactions at the sub-cellular, cellular and tissue levels. This applies to the entire range of conditions people and non-human organisms are – or may be – incurring from exposure to ionizing radiation.

Health and environmental effects, and inferred risks: *Evidence on health effects—in particular in the low dose range and from chronic exposure—relating both to cancers and non-cancer diseases, and sound estimates of the health implications for populations following radiation exposure.*

The Committee will collate and evaluate information such as epidemiological data, in particular for the low dose range and for long-term low-dose-rate exposure, and analyse data from research on mechanisms of biological reactions at such exposures. The Committee will pursue innovative approaches to integrate radiobiological and epidemiological research, to enhance the understanding of (a) radiation-induced health effects and associated inferred risks related to the induction of cancer, non-cancer effects, and hereditary disease; and (b) of environmental effects. Attention will be given to individual-related factors affecting the incidence of such effects, including age, sex, lifestyle, genetic or familial predisposition and health status.

Strategies

Sustain scientific expertise

The quality and impact of the Committee's evaluations depend on sustained high levels of scientific competence and integrity among contributors to the evaluations, within national delegations and among observers. It is incumbent on State members to nominate and provide support for delegation members with high level of relevant expertise and with the attributes of scientific leadership required to support and lead the Committee. The Committee will endeavour to regularly revise its Programme of Work as appropriate and project expertise needs accordingly.

Geographic diversity may benefit the evaluations through specific insight on sources, exposure pathways and analysis. A carefully managed membership, while being mindful of the constraints imposed by resources and the size of the secretariat, and a long-term plan for membership, contribute to maintaining the scientific vigour of the Committee.³ The Committee recognises the importance of inclusiveness of all State members, inter alia, in implementing strategies, as well as any future deliberations and scientific documents produced. Thus, the Committee welcomes the procedures established by the General Assembly for possible further increases in the membership.⁴

Optimize working arrangements for the scientific evaluations

Keeping pace with scientific developments presents an ever-increasing challenge for the scientific community generally as well as for the Committee. The yearly sessions for the entire Committee, and inter-sessional work involving consultants and some delegation members, could be supplemented with working groups that maintain an ongoing monitoring and review of certain subject areas. Their function would be to monitor emerging science in the relevant subjects, to generally support collation and evaluation of relevant data and their quality according to agreed protocols, foster the conduct of systematic reviews of specific topics, and scrutinize the results. Two working groups could be envisaged by 2019:

One that supports the *collation and analysis of data on sources and exposure*, with a broad membership covering geographical aspects as well as a wide range of professions and practices where people may be occupationally exposed. Developing innovative approaches to electronic data submission/collection and having effective working arrangements with other bodies that collate relevant data will be important.

Another that supports the Committee's work on *health and environmental effects and risks*, with a membership more limited to those countries with significant expertise in these areas. The group⁵ aims to address the important challenge of 'bridging the gap' between the information that relates to radiation biology on the one hand, and health effects as studied in epidemiology or environmental science on the other.

Communicate and disseminate the Committee's evaluations

The Committee will, to the extent possible and within its means, be transparent in its deliberations, and strive to make its scientific evaluations available to decision-makers and the wider community.

In addition to reporting, the Scientific Committee's findings to the General Assembly, the United Nations Environment Programme, through the Committee's secretariat, will continue to disseminate the findings of the Committee to the scientific community and the public.

The Committee will foster presentations of its scientific evaluations in a manner that attracts readers without compromising the scientific rigour and integrity, such as producing summaries (e.g. information sheets), making presentations at international conferences and other fora, utilizing social networks and—to the extent possible—engaging in direct dialogue with interested parties including the media and the public.

³ See A/69/350.

⁴ See paragraph 21 of resolution A/RES/73/261.

⁵ Established at the sixty-fifth session (11–14 June 2018).

Coordinate with relevant international bodies

UNSCEAR's mandate¹ provides the Committee with a clear direction to take the lead in providing authoritative scientific evaluations to the United Nations General Assembly. However, the Committee will also remain aware of efforts in other relevant international bodies. Expertise may also be scarce globally and in high demand. The Committee will liaise closely with other international bodies to avoid duplication of efforts to the extent possible. The General Assembly should invite the relevant international bodies to collaborate with the Committee concerning any work they may be doing or contemplating within the sphere of the Committee's terms of reference to assure proper co-ordination.⁶

⁶ See paragraph 5 of resolution 913(X).